**BY2 Summary of Examiner’s Comments**

**General Comments**

Candidates often failed to produce concise answers which fitted into the space provided on the examination paper. Consequently, they used additional sheets but failed to make it quite clear as to which question or part of a question the answer referred. Lastly, there were a small number of candidates whose writing was so awful that it was virtually impossible to decipher.

A continuing problem is the inability to use the correct terminology in appropriate places and lacking specificity. For example, candidates often referred to ‘it’ or ‘they’ rather than specify exactly what ‘it’ and ‘they’ were.

**2.1 Biodiversity**

Remember to mention that it is advantageous genes that are passed on which gives rise to advantageous characteristics do not just mention characteristics.

Variation within any population is brought about due to mutations.

When comparing organisms and there features use the term ‘in common’ – Ms Preston and Kate Moss have 12 genes in common whereas Ms Preston and Frankenstein have 52 genes in common’

Species definition includes organisms that can INTERBREED and produce FERTILE offspring.

Remember Darwin’s finches encountered intraspecific (between each other) competition when they reached new empty niches.

**2.2 Gas Exchange**

Remember that diffusion gradients are maintained along the whole length of the gill filament.

Make sure you can give 3 properties of gas exchange surfaces and explain why these properties are important. (gas exchange surfaces need to be moist as gases need to dissolve first before they pass through the membrane. Remember the capillary network is not a property of the actual gas exchange surface).

Remember to spell trachea**e** in insects correctly and not as trachea, which is the windpipein humans.

Gas exchange takes place at a respiratory surface.

**2.3 Transport**

**Plants**

You must refer to water vapour NOT water in your definitions for transpiration and mention it is from the stomata.

An adaptation for reducing transpiration is to roll leaves NOT curl (as this refers to just the edges).

Four type of xylem cells – vessels, tracheids, fibres and parenchyma.

Four types of phloem – companion cell, sieve cells, parenchyma and fibres.

Remember mass flow is a passive process itself even though energy is used to create a high solute concentration in the phloem initially.

Remember vascular bundles are NOT found in roots they are only found in stems.

**Animals**

Remember it is haemoglobin that is saturated with oxygen NOT the blood.

Remember that the AVN picks up waves of excitation generated from the SAN (not impulses or signals).

If the affinity for haemoglobin is lowered then this results in greater dissociation of the oxyhaemoglobin, therefore yielding more oxygen, don’t just state that the affinity is lowered, follow through with the rest.

If you draw a line on an oxygen dissociation curve remember that it should start at 0 and NOT extend above 100%.

Make sure that you know clear definitions for autotrophs, heterotrophs (parasites, saprophytes and holozoic feeders). Ensure that you can correctly define the holozoic feeders carnivore, herbivore and detritivore.

Remember arteries do not pump blood – high pressure is maintained by recoil and the presence of elastic fibres.

Remember blood does not pass out of the capillary walls it is plasma!

Hydrogen ions play an important role in the release of oxygen by oxyhaemoglobin (see above).

Remember that % saturation on oxygen dissociation curves refers to the % of oxygen binding sites on haemoglobin that are saturated with oxygen. The steeper the oxygen dissociation curve the more oxygen is released with a small drop in partial pressure.

**2.4 Reproductive Strategies**

If organisms reproduce asexually remember that due to the lack of variation a population may not be as capable of natural selection**.**

Remember it is internal and external FERTILISATION not reproduction.

Reptiles, bird and mammals all develop an amnion. In reptiles and birds it is referred to as an amniote egg.

Know the spelling of metamorphosis!

Remember all insects in order to increase in size carry out ecdysis both insects that carry out complete and incomplete metamorphosis. Sudden increase in length occurs before the skeleton hardens.

**2.5/6 Modes of Nutrition and Parasitism**

Remember that it is the epithelium of the villus that is one cell thick not the whole villus!

Remember that the muscle layer contains both circular and longitudinal muscles.

A sheep has ONE stomach divided into four chambers (not 4 stomachs!!).

Parasites gain nutrition from and cause harm to the host organism.

Tapeworms are able to produce eggs or larvae and they have both male and female reproductive parts this is NOT the same as asexual reproduction as gametes are involved.

Remember to be able to label goblet cells on the mucosa and know that they produce mucus.

Dentition refers to teeth.